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REMARKS/ARGUMENTS

Claims 1-23 remain in this application. Claims 1-4 have been amended. Claims 7-10 and 15-17 have been withdrawn. New claims 98-99 have been added. Claims 24-97 have been withdrawn as a result of an earlier restriction requirement. In view of the examiner's earlier restriction requirement, applicants retain the right to present claims 24-97 in a divisional application.

With respect to the Invention Disclosure Statement filed July 26, 2000, applicants are enclosing herewith copies of the actual patents that correspond to the English language documents which were previously submitted to the Patent Office. In particular, applicants submit herewith a Supplemental Information Disclosure Statement to cite foreign patent DE 36 35 819, which was listed as reference AM on the information disclosure statement filed July 26, 2000. Applicants respectfully request that the Examiner consider this additional reference and provide applicants with a copy of the signed and initialed Form PTO-1449 submitted herewith.

In view of the above amendments, applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-6, 8-14, and 18-23 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regards as the invention.

Applicants disagree that terms such as "hole", and "void" are indefinite as to their meaning, and submit that one of skill in the art would have no problem understanding the claim scope defined by claim 1. The Examiner indicated that he could find no definition for "hole" which permits a scope which has no entrance. Attached herewith is a definition of hole, the first definition of which is "a cavity in a solid." This definition, which is taken from the American Heritage Dictionary, clearly permits a scope which has no entrance.

§ 103 Rejections

Applicants respectfully traverse the rejection of claims 1 and 3-5 under 35 U.S.C. § 103(a) as being unpatentable over Onishi (6,076,376) alone or in view of Glodis (6,105,396). There is no mention or suggestion in either of these two references of closing the outside diameter of the glass object such that the hole closes uniformly and symmetrically.

With respect to claim 3, Onishi does not mention or suggest a single mode optical fiber which exhibits less than .2 psec/sqrt-km when the fiber is in an unspun state. Instead, Figure 12, which is pointed out by the Examiner as evidence that Onishi shows a fiber having low dispersion values, actually indicates that the only way low dispersion values were achieved in the Onishi method is by spinning the fiber. With respect to Examiner's assertion that in between spun portions there are ends of fiber that have an unspun state and at these locations the spin is zero, this is true, however the fiber in this unspun region would of course not have reduced PMD.

Further, the passage referred to by the Examiner in Onishi (column 8, lines 50-55) indicates that a variety of manufacturing techniques can be used to fabricate an optical fiber preform. There is no mention or suggestion in Onishi of which manufacturing process was utilized to manufacture the fibers illustrated in Figure 12. Consequently, because those fibers may indeed have been fabricated by the VAD method (i.e., a method which does not result in a hole or void in the center of the preform), there is no teaching that this reference utilizes any type of hole closure technique at all prior to drawing the fiber illustrated in Fig. 12, yet alone a hole closure technique that will result in symmetric hole closure. Instead, Onishi is clearly directed to spinning the fiber to reduce the PMD in the optical fiber, whereas applicants' invention is a method which reduces the PMD in a fiber without having to spin the fiber. While applicants' invention can be used in conjunction with spinning techniques to reduce the PMD even further, the fact that applicant is able to achieve such low PMD without having to spin the fiber, as was necessary in Onishi, evidences the surprising improvement that applicant's invention enables.

The Patent Office indicates that it would have been obvious in view of Glodis to use a pressure at least equal to atmospheric to prevent atmospheric pressure from collapsing the tube in the Onishi MCVD process. As explained above, there is no clear teaching, or even a suggestion, in Onishi that the MCVD process was utilized to manufacture the fibers referred to by the Examiner (Figure 12). Consequently, the combination of Glodis with Onishi would not result in applicant's claimed invention as defined by newly amended claim 1.

Applicant respectfully traverses the rejection of claims 1-2 and 6 under 35 U.S.C. § 103(a) as being unpatentable over Berkey (U.S. 5,152,818). Berkey does not mention or suggest using an intermediate glass object which has a hole wherein, the

center of the hole positioned along the centerline of the glass object. Instead, feature 80 which is referred to by the Examiner in Figures 9-10 and 14 of Berkey, shows a hole which is located off of the centerline of the glass object. According to the Patent Office, it would have been obvious to have the hole close uniformly and symmetrically along the centerline axis, so that the fiber will have the same cross-section at every location along its length. Applicants disagree with this statement, as applicants have discovered that the holes can close extremely non-uniformly and non-symmetrically along the centerline axis and the fiber will still achieve the same cross-sectional dimension at every location along its length. This is further evidence of the surprising results of applicant's invention, which was not mentioned or suggested in any of the references cited by the Examiner.

Applicants respectfully traverse the rejection of claims 1-2, 12-14, and 18-23 under 35 U.S.C. §103(a) as being unpatentable over Berkey (U.S. 5,917,109). Berkey does not disclose reducing the outside diameter of the glass object under conditions sufficient to cause the hole to close uniformly and symmetrically. With respect to claim 23, there is no mention or suggestion of closing the hole such that the fiber exhibits a radial symmetry of less than .025 μm . According to the Examiner, it would have been obvious to have the fibers as close to symmetrical as possible so that the fibers possess the desired profile of Figure 7 or 8 at every position. Applicants disagree with this statement, as it is very common for optical fibers to be made such that they are not as symmetric as possible, because the degree of non-symmetry does not substantially affect the properties of the optical fiber. For example, the likely cause of the high amount of PMD in the Onishi fiber prior to spinning is due to asymmetry in the fiber. One common way to mitigate the non-symmetry is to spin the fiber, as Onishi suggests, to lower the PMD of the fiber. Applicants invention is directed to a new technique for lowering the PMD resulting in the fiber from non-symmetric hole closure, i.e., closing the hole uniformly and symmetrically so that a low level of PMD can be achieved.

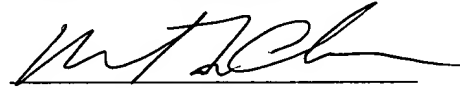
Based upon the above amendments, remarks, and papers of records, applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Appl. No.: 09/558770
Amdt. Dated: 05/18/2004
Reply to Office Action of: 02/18/2004

Applicant believes that no extension of time is necessary to make this Reply timely. Should applicant be in error, applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) or additional fees as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Robert L. Carlson at 607-974-3502.

Respectfully submitted,



DATE: May 18, 2004

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